

VU Research Portal

The assignment of moral status: Age-related differences in the use of three mental capacity criteria

Olthof, T.; Rieffe, C.J.; Meerum Terwogt, M.; Lalay-Cederburg, C.; Reijntjes, A.H.A.; Hageraar, J.

published in

British Journal of Developmental Psychology
2008

DOI (link to publisher)

[10.1348/026151007X216036](https://doi.org/10.1348/026151007X216036)

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Olthof, T., Rieffe, C. J., Meerum Terwogt, M., Lalay-Cederburg, C., Reijntjes, A. H. A., & Hageraar, J. (2008). The assignment of moral status: Age-related differences in the use of three mental capacity criteria. *British Journal of Developmental Psychology*, 26, 233-247. <https://doi.org/10.1348/026151007X216036>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl



The assignment of moral status: Age-related differences in the use of three mental capacity criteria

Tjeert Olthof^{1*}, Carolien Rieffe², Mark Meerum Terwogt¹,
Cindy Lalay-Cederburg¹, Albert Reijntjes³ and Janneke Hagenaar⁴

¹Department of Developmental Psychology, VU University Amsterdam,
The Netherlands

²Department of Developmental Psychology, Leiden University, The Netherlands

³Department of Psychosocial Development in Context, Utrecht University,
The Netherlands

⁴De Activiteit, Alkmaar, The Netherlands

This study examined children's and young adults' use of three mental capacity criteria for treating an entity as one to which moral subjects have moral obligations, that is, as having moral status. In line with philosophical theorizing, these criteria were the capacity to (1) perceive; (2) suffer; and (3) think. In this study, 116 respondents aged 9 to 18 years old gave moral judgments and guilt and shame attributions in response to stories about perpetrators whose behaviour negatively affected entities with different mental capacities. The moral judgments revealed that 9-year-old children assigned moral status primarily on the basis of the victimized entity's ability to suffer. Eleven-year-old children also used the ability to suffer, but they assigned additional moral status when the victimized entity was able to perceive. Young adults also used perception as a criterion, but they assigned additional moral status when the victimized entity was simultaneously able to suffer and able to think. When compared to their moral judgments, the moral emotion attributions of respondents of all age groups were more strongly affected by the victimized entity's ability to think.

Many of the events that people take to be morally relevant involve a perpetrator causing harm to a victim, which in turn causes suffering on the side of the victim. It is therefore not surprising that much research on the development of moral awareness has focused on how the moral judgments of children and adults about a perpetrator's doings are affected by (1) the perpetrator's responsibility for harming the victim and (2) the severity of the harm that is caused (e.g. Piaget, 1932; Yuill, 1984; Zelazo, Helwig, & Lau,

*Correspondence should be addressed to Dr Tjeert Olthof, Department of Developmental Psychology, VU University Amsterdam, Van der Boechorststraat 1, 1081 BT, Amsterdam, The Netherlands (e-mail: T.Olthof@psy.vu.nl).

1996). However, as is clear from Kahn's (2006) overview of the development of children's moral relationships with nature, there is a third aspect of harmful morally relevant events that is likely to affect people's morally charged reactions to such events. Specifically, such reactions also depend on their explicit or implicit ideas about whether the victimized entity belongs to the category of entities to which moral subjects have *moral obligations*, or, to use the term that is commonly used in the branch of philosophy called *ethics*, to the category of entities having *moral status* (Warren, 1997).

As is clear from discussions in ethics, a key issue in this area concerns the criteria that are used to credit an entity with moral status. As will be reviewed below, several such criteria have been identified, but, being the products of philosophical reflection, they have essentially been derived from the intuitions of a limited number of highly sophisticated thinkers, which leaves it unclear whether these criteria are actually used by ordinary people of different ages when reacting to cases of harm doing. Unfortunately, few empirical researchers have systematically addressed the issue of moral status assignment, especially from a developmental perspective. This relative lack of attention is unfortunate because adults' and children's moral concerns about harming non-human entities are likely to affect their attitude towards several important societal issues, ranging from the acceptability of particular practices in the meat industry to the use of chimpanzees in biomedical research. Based on these considerations, the aim of the present study is to empirically examine whether the criteria that have figured most prominently in the literature are actually used by children and young adults when crediting an entity with moral status.

What are these criteria? Drawing from the literature on animal rights, Kahn (2006) argued that some form of human obligation towards an entity arises from crediting that entity with the ability to suffer or to feel pleasure or pain. In line with the writings in the animal rights (Singer, 1975) and ethical (Warren, 1997) literatures, Kahn referred to this ability as *sentiency*. However, because the dictionary meaning of this term is *the ability to have sensory experience*, using it to refer to the ability to suffer might raise misunderstandings. Accordingly, in the remainder of this paper we will use *ability to suffer*, rather than *sentiency*.

As is clear from Warren's (1997) overview of the moral status literature, the ability to suffer has also figured prominently in discussions among ethicists and it has particularly been defended by utilitarian philosophers like Bentham (1789) and Singer (1975). However, as is also clear from Warren's overview, others have defended both more and less inclusive criteria. An extremely inclusive, and therefore rather impractical, criterion is Albert Schweitzer's *reverence for life* principle that assigns a moral status to every single living organism. On the less inclusive side, and far more influential, is Immanuel Kant's requirement that the entity should be a moral subject herself which, according to Kant, in turn requires that the entity (1) be rational and (2) have a free will, which effectively excludes non-human beings from being credited with moral status. Because the Kantian criterion stresses the entity's rationality as a necessary condition for being credited with moral status, we will refer to this criterion as *the ability to think*.

Moral status assignment need not be based on just one criterion. Warren (1997) recommended a multi-criterion approach that includes several of the criteria that have been proposed in the ethical literature. Accordingly, a simplified summary of the moral status literature is that two types of mental capacities are important as potential criteria for assigning moral status to an entity, i.e. the utilitarian criterion that the entity has to be able *to suffer* and the Kantian criterion that the entity has to be able *to think*.

Children and adults are known to attribute both mental capacities to at least some non-human entities (Coley, 1995; Knight, Nunkoosing, Vrij, & Cherryman, 2003), but what evidence is there that they acknowledge the moral relevance of both types of attributions? The examples given by Kahn (2006) suggest that at least some children acknowledge the moral relevance of the ability to suffer. In an empirical study, Herzog and Galvin (1997) related adults' estimates of the extent to which several species would deserve moral consideration, to different types of attributions to those animals, including the ability to suffer, cognitive capacities and attractiveness. Findings indicated that the ability to suffer was more closely related to moral deservingness than the other attributions, which suggests that for adults too the ability to suffer is an important criterion for moral status assignment.

One reason for the importance of the ability to suffer might be the close relation of this criterion with the central moral concept of *harm*. Specifically, causing harm to an entity usually implies doing something that the affected entity considers disagreeable and one could even argue that the claim that harm has been caused to an entity implies the claim that the entity is able to suffer. Accordingly, it can be expected that an entity's ability to suffer is an important determinant of the assignment of moral status to that entity for individuals of any age group. This is the first hypothesis to be tested.

As is clear from the above discussion, there can hardly be any doubt that the ability to suffer contributes to an entity's moral status to some extent. Societal controversy arises, however, regarding the claim of some vegetarians and animal rights activists that this ability is *sufficient* to credit an entity with the moral status that we traditionally assign to members of our own species. Their opponents would instead agree with Kant that such a moral status should only be assigned to rational beings. Accordingly, for many respondents, an entity's thinking skills can be expected to provide at least some contribution to the assignment of moral status to that entity. This expectation is confirmed by utterances of some of Knight *et al.*'s (2003) adult respondents, who acknowledged the moral relevance of animals' ability to think.

Developmental theorizing about children's moral development also leads us to expect that being able to think is an important contributor to the assignment of moral status and that the importance of this criterion increases with development. Specifically, based on their reading of Piaget (1932), Davidson and Youniss (1995) argued that a central moral norm is that one should respect persons. These authors further argued that a child's realization that particular individuals or categories of individuals actually are persons who should be respected, results from cooperating with those individuals in the construction of norms of social interaction, which is what normally happens when two individuals interact. By grounding the concept of persons – that could in terms of the present study be defined as those being assigned full moral status – in cooperative interaction, Davidson and Youniss seem to imply that having advanced cognitive capacities is essential for being recognized as a person, which in turn implies that the ability to think is a likely contributor to the assignment of moral status. Davidson and Youniss further argued that as children are likely to interact with increasingly diverse others in the course of development, they have to continuously redefine and expand their concept of *persons*. In terms of this account, children can be expected to increasingly recognize the moral relevance of having the cognitive capacities that enable an individual to cooperatively interact with others. Accordingly, our second hypothesis is that the importance of an entity's ability to think, as a criterion for the assignment of moral status, increases with age.

Based on the above ideas, the present study is aimed to examine the development of moral status assignment. Specifically, we ask whether the moral status that individuals of different ages assign to an entity depends on whether the individual believes that the entity is (1) able to suffer and (2) able to think. In addition, a third type of mental capacity is included in the studies, i.e. whether an entity has perceptual abilities. Having such abilities can be taken as an indication that the entity is an animate living being (Jonas, 1966), which in and of itself can be expected to earn the entity some moral status (Warren, 1997).

To address these issues, we asked respondents of different ages to react to stories about a human protagonist whose behaviour physically affected several entities that were specifically called into existence for the purposes of the study and that were thus unknown to the respondents. Previously non-existent – rather than natural – entities were used to ensure that no *a priori* knowledge about the affected entities would influence the respondents' reactions. To be able to examine the importance of each criterion, we manipulated the affected entities' mental capacities. One way to assess the moral status that respondents assigned to each entity would have been to subsequently ask how much consideration each entity would deserve when seen from a moral perspective (cf. Herzog & Galvin, 1997). While this seems a straightforward way to measure moral status assignment, we considered this question far too abstract for the use with children. Instead we asked our respondents another question, i.e. how wrong they considered the behaviour of the protagonists towards each of the entities to be, which enabled us to examine the effect of the mental capacity manipulation on the respondents' moral judgments. This design ensures that respondents' differential moral judgments about affecting each of the victimized entities can only be ascribed to their differential assignment of moral status to those entities. Accordingly, moral judgments serve as the first and primary measure of moral status assignment in this study.

In the literature, claims have been made that people's moral judgments about an event actually are a derivative of their affective reactions towards that event (e.g. Haidt, 2001; Hoffman, 2000). Such claims are still highly controversial (see, for example Saltzstein & Kasachkoff, 2004), but when valid, they might be taken to imply that people's moral attitude towards an event could also be assessed by measuring their morally relevant affective reactions to the event. The two emotions that come to mind first as indices of moral affect are empathy-based guilt and moral shame. Empathy-based guilt arises when feeling empathic towards an entity that is negatively affected by one's own involvement in the causation of a moral wrong (Olthof, Ferguson, Bloemers, & Deij, 2004) and this type of guilt has been identified as a truly *moral* emotion (Hoffman, 2000; Olthof *et al.*, 2004). Shame is less exclusively tied to morally relevant events, but when occurring in response to such events, shame is highly related to guilt and can well be seen as another morally charged emotional reaction to the event (Olthof *et al.*, 2004). Previous research has shown that children from 9 years onwards are well able to attribute moral emotions to perpetrators of harm (Olthof, Schouten, Kuiper, Stegge, & Jennekens-Schinkel, 2000; Olthof *et al.*, 2004), indicating that both emotions can be used to indicate school-aged children's morally charged emotional reactions. Based on these ideas, we included a second measure of moral status assignment, i.e. the respondents' attributions of guilt and shame to the perpetrator.

When constructing the stories for the present study, we restricted ourselves to using cases of physical rather than psychological harm doing. This was done because using psychological harm might well have elicited the respondents' use of the thinking criterion for a different reason than was implied in our second hypothesis. Specifically,

as testified by the words of the biblical author Qoheleth that ‘... *in much wisdom is much grief and he that increaseth knowledge increaseth sorrow*’ (Ecclesiastes 1:18) it is known for long that being able to think increases one’s ability to suffer. Accordingly, any effects of an entity’s ability to think on respondents’ moral judgments about cases of psychological harm doing would be ambiguous in terms of whether they would reflect the respondents’ use of the thinking criterion in the Kantian sense, i.e. as a direct contributor to moral status, or whether they would reflect their awareness that the ability to think increases an entity’s ability to suffer.

In sum, 9-, 11- and 18-year-old respondents were presented with several stories in which an imaginary protagonist potentially affects the well-being of a hypothetical entity that is previously and unequivocally defined in terms of whether it (1) does or does not have perceptual capacities; (2) is or is not able to suffer and (3) is or is not able to think. Respondents were subsequently asked how wrong they considered the protagonists’ behaviour to be and how guilty and ashamed the protagonists would feel. Since the nature of the protagonists’ behaviour was kept constant across all stories, differences between the entities in terms of the respondents’ responses can be interpreted in terms of the moral status that respondents assigned to the entities on the basis of their presumed mental capacities.

Method

Participants

Participants were 82 children from an elementary school in a medium-sized town in the north-western part of the Netherlands, as well as 34 young adults. The adults were recruited among final grade high-school students who paid a one-day visit to the campus of the Vrije Universiteit of Amsterdam to orient themselves on the possibilities of studying psychology, and among first-year students of subjects such as law, economy, anthropology, etc., who were in the university main hall during a break between lectures.

The children were divided into two age groups: 9-year-olds (23 boys and 18 girls, $M = 9$ years 10 months, $SD = 5$ months) and 11-year-olds (21 boys and 20 girls, $M = 11$ years 10 months, $SD = 4$ months). The young adult group consisted of 15 males and 19 females ($M = 18$ years 4 months, $SD = 12$ months).

Stories and design

The respondents were presented with stories in which an imaginary child protagonist’s playing behaviour physically affects some unknown entity. The entities were labelled using well-formed, but previously non-existing, Dutch nouns. No further information was given about each entity except that a description was given of the entity’s mental capacities. A straightforward way to test our hypotheses would be to use an orthogonal design in which respondents are presented with all combinations of the three mental capacities being or not being present. Nevertheless, we did not use such a design because we feared that confronting children with the more exotic combinations of factors (i.e. suffering or thinking entities that are unable to perceive, or a thinking entity that is unable to perceive *and* that is not able to suffer) would confuse them to the point of not being able to respond to the less exotic patterns. Accordingly we decided to test the use of the three mental capacities by making particular planned comparisons between the five relatively least exotic mental capacity patterns. These patterns were (1) 000 = perception absent, ability to suffer absent, thinking skills absent;

(2) 100 = perception present, ability to suffer absent, thinking skills absent; (3) 101 = perception present, ability to suffer absent, thinking skills present; (4) 110 = perception present, ability to suffer present, thinking skills absent and (5) 111 = perception present, ability to suffer present, thinking skills present. It should be noted that respondents could only use the mental capacity information to make any further inferences about the affected entity, including whether the entity would or would not be a living being.

To keep the respondents interested in the task, each mental capacity pattern was combined with a different story theme. Across respondents the mental capacity patterns were combined with story themes according to a Latin square design. The five story themes were (1) bumping into the victimized entity when roller skating in a park; (2) hitting the entity with a tennis racket; (3) hitting the entity with a skipping rope that came loose; (4) hitting the entity with a Frisbee; and (5) kicking the entity with one's feet while on a swing.

Because the design of the study required that the events would differ only in terms of the mental capacities of the victimized entities, the protagonist's responsibility for the outcome was kept constant across story themes. Specifically, in all story themes it was implied – but not said explicitly – that if the protagonist had taken more care, the event might not have occurred. Accordingly, the perpetrator's responsibility was fixed to the level that responsibility researchers have called 'foreseeable' (Heider, 1958). As is true for cases of accidental harm doing, foreseeably caused harm is unintentionally caused, but it differs from accidentally caused harm in that the protagonist could have avoided the negative outcome, for example by exerting more care. School-aged children are known to give more harsh moral judgments in the case of foreseeable harm when compared with accidentally caused harm (Olthof, Ferguson, & Luiten, 1989). Similarly, adults have been shown to give higher ratings of guilt in the case of foreseeable harm when compared with accidentally caused harm (Ferguson, Olthof, & Stegge, 1997; McGraw, 1987). Accordingly, with a victimized entity having full moral status, respondents can be expected to give moderately harsh moral judgments and moderately high estimates of the perpetrator's feelings of guilt, which leaves room for giving lower judgments when the victimized entity is assigned less than full moral status.

The following example combines the roller skating story theme with the 110 (*perception present, ability to suffer present and thinking skills absent*) pattern of mental capacity attributions: *Jennifer is using her roller skates in the park. In the park is also a nambo. Do you know what a nambo is? I don't know either, but I do know that nambos are able to see and hear and to feel pain, but that they are not able to think. When Jennifer goes down a hill really fast, the road makes a bit of a bend. Suddenly Jennifer sees the nambo. Jennifer bumps into the nambo with a big bang. The nambo turns over and hits the road hard.* After being presented with a story, children were asked three questions, i.e. how wrong (original Dutch: *slecht*) they considered the protagonist's behaviour to be because of what happened to the entity, how guilty the protagonist would feel, and how ashamed the protagonist would feel.

Procedure

The children were tested in their own classroom by a female graduate student who served as the experimenter. The experimenter first trained children to use a visual representation of a 5-point rating scale that was to be used later in the procedure. The scale consisted of a 'staircase' of five size-graduated vertical rectangles that were drawn next to each other. The experimenter first pointed to the smallest and the largest rectangles and verbalized the

appropriate labels (*not at all wrong* and *very very wrong*). She then explained how the scale could be used, using a rating of how wrong it would be for a child to take sweets without asking permission as an example. To further introduce the nature of the task, the experimenter subsequently discussed two anchor stories that were designed to elicit the use of both extremes of the wrongness scale. In the first of these, a child protagonist carelessly kicks a heavy ball which then hurts a little boy who is standing nearby. In the second anchor story, the ball lands on the rusty remains of an old bicycle that was lying around. Informal observation of children's responses confirmed that children tended to use both extremes of the rating scale when evaluating these stories.

Testing then continued by presenting each child with one out of five versions of a story booklet. Each page of the booklet contained one of the five story themes together with the questions that were asked about each story. Story themes were presented in a fixed order, but booklet versions differed in terms of how the story themes were combined with the five mental capacity attribution patterns. Specifically, each story theme was combined with each mental capacity pattern about equally often, which also ensures that each mental capacity attribution pattern appeared about equally often in each presentation order position.

The experimenter then read aloud the first story, while encouraging children to keep track of the story by reading it for themselves at the same time. Because children were presented with different mental capacity patterns due to the order manipulation, the experimenter left a pause at the point where the information about the entity's mental capacities was to be presented and she encouraged children to read that information in silence for themselves. To help children doing this, the stories in their booklets were printed in such a way that the mental capacity information clearly stood out from the rest of the story.

After reading each story, children were asked the three questions that were mentioned above. The questions were read aloud, but they were also printed in the booklets. Each question was accompanied by the visual representation of the rating scale that children had learned to use before. The experimenter encouraged children to answer each question by placing a cross in one of the vertical rectangles that constituted the scale. All the five stories were presented in this manner. It was stressed that children were not allowed to move on to the next page until the experimenter asked them to do so.

To test the young adult participants, they were handed a similar booklet as was used with the children, the only difference being that the visual analogue of the rating scale was substituted by a numerical rating scale ranging from 1 to 5 with the extremes being labelled in the same way as in the children's booklet. In addition, the adults received a written instruction in which it was explained that the procedure was also used with children, but that they themselves should answer the questions in accordance with their current opinions and feelings, rather than in accordance with how they would have felt when being a child. The adults read the stories on their own and they subsequently answered the questions without the experimenter being involved.

Results

Wrongness judgments

The judgments of the wrongness of the perpetrator's behaviour were analysed in a 3 (Age) \times 2 (Gender) \times 5 (Mental capacities = 000 vs. 100 vs. 101 vs. 110 vs. 111) mixed-design analysis of variance with Mental capacities as the within-subjects factor.

The analysis yielded significant main effects of Mental capacities $F(4, 107) = 21.32$, $p < .001$ and Age $F(2, 110) = 4.67$, $p < .05$, but both effects were qualified by a significant interaction of Age \times Mental capacities $F(8, 212) = 1.98$, $p = .05$. No other effects reached significance.

To further explore the Age \times Mental capacities interaction, separate analyses were carried out for each age group, with Mental capacities as the only factor. The results of these analyses are presented in the rightmost column of Table 1. As can be seen in Table 1, the effect of Mental capacities was significant for all age groups. To examine how respondents in each age group differentiated between the entities with different mental capacities, four planned contrasts were carried out. First, to examine whether the ability to suffer would take prominence over the ability to think as a criterion for assigning moral status, we examined whether affecting the 110 (perceiving-and-suffering) entity elicited more harsh moral judgments than affecting the 101 (perceiving-and-thinking) entity. Second, to examine whether children used the ability to think as a criterion, the 101 (perceiving-and-thinking) vs. 100 (perception-only) and the 111 (perceiving-and-suffering-and-thinking) vs. 110 (perceiving-and-suffering) contrasts were made. Finally, to examine whether respondents also used perception as a criterion, the 100 (perception-only) entity was contrasted with the 000 entity that lacked all mental capacities. When a particular contrast was significant, this is indicated in Table 1 by inserting a *smaller-than* sign between the particular pair of means.

As can be seen in Table 1, for both groups of children – but not for the young adults – the contrast between the 101 (perceiving-and-thinking) vs. the 110 (perceiving-and-suffering) entity was significant, which indicates that for children the ability to suffer outweighed the ability to think as a determinant of moral status. For the 9-year-old children, the ability to suffer also was the only mental capacity that significantly affected moral status assignment. For the 11-year-old children, the contrast between affecting the 000 (no mental capacities) vs. 100 (perception-only) entities also reached significance, which indicates that for these children an entity's moral status also depended on whether it had perceptual abilities. In sum, the findings for the two groups of children indicate that they treated the ability to suffer as a key determinant of moral status, but the eldest children also took the victimized entity's perceptual abilities into account. Remarkably, an entity's ability to think did not affect children's wrongness judgments.

The pattern of findings for the young adults resembled that of the 11-year-old children in that the contrast between affecting the 000 entity without any mental capacities vs. the 100 (perception-only) entity was significant, indicating that the young adults took the entity's perceptual abilities into account when assigning moral status. However, the young adults differed from the children in that they judged affecting the 100 (perception-only), 101 (perceiving-and-thinking) and 110 (perceiving-and-suffering) entities to be about equally wrong. This indicates that for the young adults neither the ability to suffer, nor the ability to think, had strong implications for an entity's moral status, at least *when considered in isolation*. However, as testified by the significant contrast between affecting the 110 (perceiving-and-suffering) vs. the 111 (perceiving-and-suffering-and-thinking) entities, the young adults did take the entity's ability to think into account, but only when the entity also was able to suffer. Accordingly, for the young adults only the *combination* of the ability to suffer *and* the ability to think earned an entity additional moral status over and above the moral status assigned to the perception-only entity.

Table 1. Means reflecting the age \times mental capacity effect on the wrongness judgments and the results of subsequent analyses per age group

		Mental capacity pattern						
Perception		000	100	101	110	111		
Suffer		No	Yes	Yes	Yes	Yes		
Thinking		No	No	No	No	Yes		
Age group								Mental capacity effect
9 years ($n = 41$)		2.46 (1.34) ¹	2.70 (1.15)	2.95 (1.20)	< 3.78 (.91) ²	3.61 (1.05)		$F(4, 37) = 10.26^{***3}$
11 years ($n = 41$)		2.02 (.99)	< 2.61 (1.02)	2.61 (.83)	< 3.24 (1.07)	3.41 (.95)		$F(4, 37) = 9.11^{***}$
18 years ($n = 34$)		2.03 (1.14)	< 2.50 (1.16)	2.53 (1.19)	2.65 (1.23)	< 3.15 (1.33)		$F(4, 30) = 5.09^{**}$

¹ Standard deviations are given in parentheses.
² Smaller-than signs between pairs of horizontally adjacent means reflect the results of the four planned contrasts between the means (with < indicating that both means differ at $p \leq .05$).
³ ** = $p \leq .01$; *** = $p \leq .001$.

Guilt and shame attributions

Children's attributions of the emotions of guilt and shame were analysed in the same way as their wrongness judgments, but the analyses on guilt and shame only yielded significant effects of mental capacities with no other effects reaching significance. The means corresponding to these effects as well as the ANOVA results are presented in Table 2. To further examine how respondents differentiated between the victimized entities when attributing emotions of guilt and shame, the same four planned contrasts were carried out that were described when discussing the results for the wrongness judgments. As before, the significance of each contrast is indicated in Table 2 by inserting a *smaller-than* sign between the particular means that were contrasted.

As can be seen in Table 2, for guilt all four contrasts reached significance, which indicates that respondents took all three mental capacities into account when attributing the emotion of guilt to the perpetrator. The fact that the significant contrasts included the 101 (perceiving-and-thinking) vs. 110 (perceiving-and-suffering) contrast indicates that when attributing the emotion of guilt to the perpetrator respondents put more weight on the ability to suffer when compared with thinking. For shame the pattern was very similar to that obtained for guilt, with the exception that the 101 vs. 110 contrast was not significant. Although not shown in Table 2, an additional analysis revealed that the 100 (perception only) vs. 110 (perceiving-and-suffering) contrast was significant ($p < .01$). Accordingly, when attributing shame to the perpetrator, respondents took all the three mental capacities into account, but without putting extra weight on the ability to suffer.

Discussion

In line with our first hypothesis, the 9- and 11-year-old children's ratings of the wrongness of the protagonist's behaviour and their attributions of the emotions of guilt and shame to the protagonist indicate that the attribution of the ability to suffer to an entity is a key determinant of children's assignment of moral status. In addition, two other findings are important. First, age-related differences were found with respect to the use of all three mental capacity criteria when giving moral judgments and, second, the use of these criteria depended on whether respondents gave moral judgments about the perpetrator's behaviour or whether they attributed moral emotions to the perpetrator. Both types of findings will be discussed below.

For the 9-year-old children, the ability to suffer was the only criterion that significantly affected their moral judgments. The 11-year-old children used both the ability to suffer and perceptual abilities. Finally, the young adults also used the entity's perceptual abilities, but the ability to suffer only affected their moral judgments when combined with the ability to think. This pattern of findings indicates that there was an age-related decrease in the use of the ability to suffer as an independent criterion for the assignment of moral status, as well as age-related increases in the use of perceptual abilities and the ability to think, be it that the latter criterion was only used by the eldest respondents and only when combined with the ability to suffer.

When taken together, these results both support and qualify our first hypothesis that the ability to suffer is an important determinant of moral status assignment, the qualification being that for the eldest respondents the ability to suffer only affected moral status when combined with the ability to think. The findings also provide qualified support for our second hypothesis, i.e. that the ability to think would be

Table 2. Means representing the main effects of Mental Capacity on moral emotion attributions

		Mental capacity pattern					
Perception Suffer Thinking Emotion	000	100	101	110	111		
	No	Yes	Yes	Yes	Yes		
	No	No	No	Yes	Yes		
	No	No	Yes	No	Yes		
Emotion Guilt Shame	2.70 (1.24) ¹	< 2.97 (1.14) ²	< 3.32 (1.03)	< 3.57 (1.03)	< 3.87 (.99)	Mental capacity effect: $F(4, 107) = 17.46^{***3}$	
	2.68 (1.28)	< 3.03 (1.18)	< 3.45 (1.13)	3.38 (1.12)	< 3.77 (1.06)	$F(4, 107) = 18.19^{***}$	

¹ Standard deviations are given in parentheses.

² Smaller-than signs between pairs of horizontally adjacent means reflect the results of the four planned contrasts between the means (with < indicating that both means differ at *p* ≤ .05).

³ *** = *p* ≤ .001.

increasingly important over the course of development. Specifically, as is clear from inspecting the 100 (perception-only) vs. 101 (perceiving-and-thinking) contrast in Table 1, the ability to think did not have an independent effect on moral status assignment for any age group. However, inspection of the magnitude of the 110 (perceiving-and-suffering) vs. 111 (perceiving-and-suffering-and-thinking) contrast for the three age groups reveals that as an addition to the capacities of a perceiving-and-suffering entity, the impact of the ability to think increased with respondent age. Accordingly, these results simultaneously support and qualify our second hypothesis in that the importance of the ability to think increased with age, but only as an addition to the capacities of perceiving-and-suffering entities. Finally, a third and unpredicted developmental trend was found with respect to the most elementary mental capacity, i.e. the ability to perceive, which was weighed more heavily by older than younger participants. Possibly this indicates that the older children and young adults took an entity's perceptual abilities to indicate that the entity was an animate living being, rather than a plant or a lifeless object. In sum, these findings suggest that in the course of development an initial focus on the ability to suffer is replaced by a pattern that is in line with Warren's (1997) plea for a multi-criterion approach to moral status assignment.

We measured moral status assignment by assessing respondents' reactions to events in which a target entity was hit, kicked or affected physically otherwise. It could be argued that our focus on physical harm – rather than on other potential violations of an entity's rights, like keeping it captive – explains why the ability to suffer generally contributed more to moral status assignment than the ability to think.¹ The argument would be that moral agents' awareness that an entity is able to feel pain leads them to feeling obliged to respect the entity's physical integrity, but not necessarily to also respect the entity's autonomy in other ways, for example by granting it freedom of movement. For moral agents to feel the latter type of obligation, the entity would also need to possess higher order cognitive skills like being able to think.

If valid, this account would imply that moral status is not a unitary construct, but that there are different types of moral status that would guarantee the status holder different types of protection and that would be assigned on the basis of different criteria. Actually, research on people's attitudes towards using animals in scientific research has shown that people may object to causing pain to particular animals while at the same time considering it acceptable to keep those animals captive (Plous, 1996). Although we are uncertain about how such an account could explain the age-related differences that we found, we do think that future research should examine the possible multiplicity of moral status by including other potential infringements of an entity's autonomy, including holding the entity captive.

Apart from providing qualified support for both hypotheses, the present results also reveal that our three measures of moral status assignment are not fully equivalent. The main differences were (1) that guilt and shame were more sensitive to whether the victimized entities were or were not able to think and (2) that – possibly as a consequence of the greater sensitivity to thinking – no age-related differences were found for guilt and shame. These findings raise the issue of why a victimized entity's ability to think would affect attributions of guilt and shame to a perpetrator, but not moral judgments about his or her behaviour.

¹ We are grateful to David Moshman for suggesting this point.

In line with our rationale for including guilt and shame, it could be concluded that moral affect actually is a more sensitive indicator of people's moral attitude towards an event than moral judgments. This would, in turn, imply that respondents in all age groups actually used all three mental capacity criteria when assigning moral status. However, an alternative interpretation is also possible. Specifically, the findings might also reflect that guilt and shame are not only moral emotions, but social emotions as well. Guilt might not only be an affective response to being involved in the causation of a moral wrong, but also an attempt to repair any damage that might have been caused to one's relationship with the victim (Baumeister, Stillwell, & Heatherton, 1994). When seen from this perspective, guilt is most likely to arise when the victim has the ability to respond positively to a perpetrator's display of guilt, for example by thinking less negatively about the perpetrator. Similarly, shame has a strong connotation of being exposed to an audience that is likely to think negatively about one's person (Crozier, 1998; Smith, Webster, Parrott, & Eyre, 2002). Accordingly, both guilt and shame responses can also be seen as attempts to alleviate someone else's negative thoughts about the self and these emotions are therefore most likely to arise when the victimized entity can be expected to 'think back' in response to being harmed. When correct, this interpretation implies that attributions of guilt and shame do not necessarily reflect the respondents' awareness that moral subjects have moral obligations to the affected entity. Rather, they might also reflect the respondents' awareness that the protagonist might fear being seen in a negative light by the affected entity.

Future studies could distinguish between both interpretations of the moral affect findings by including additional affective reactions that are similar to guilt and shame in being social emotions, but that do not reflect the respondents' moral attitude (e.g. fear or embarrassment). When such emotional reactions would differentiate among the affected entities in similar ways as guilt and shame did in the present study, this would support the *social emotion* interpretation of our current findings. When non-moral social emotions would differentiate among the affected entities in different ways, this would support the *moral status* interpretation of the current moral affect findings.

The present study is not without limitations. One of these concerns the age range of the children who were tested. Accordingly, it remains for future research to examine how children younger than age 9 would assign moral status. Given the intimate connection between the concept of harm and the ability to suffer, and given the fact that the concept of harm occupies a central place in the moral thinking of even 3-year-old children (Zelazo *et al.*, 1996), it might be expected that even much younger children use the ability to suffer as a criterion for moral status assignment.

Other limitations arise from the particular choices that were made when conducting the study. For example, in all stories the perpetrators' responsibility for the event was similar in that their behaviour was unintentional, although they also could be accused of exerting insufficient care. Future research should establish whether the results that were obtained in the present study depend on factors like the perpetrators' responsibility for the event and the severity of the damage that was caused.

While acknowledging the limitations of the present work, we also consider it as a promising beginning that should be extended in several directions, one of these being work on the generalizability of the present findings to other types of harmful behaviour and to other categories of affected entities. Other possible extensions include work on how moral status assignment is related to cultural factors and to the development of children's theory of mind and their knowledge of natural kinds.

An issue that is raised by the present research, but not yet addressed, is whether the concept of moral status can also play a role when explaining people's differentially negative moral judgments about harming fellow human beings. As suggested by the use of similar concepts in explanations of contemporaries' moral attitude towards the treatment of slaves in previous centuries (see the example cited by Kahn, 2004), and of Jews, Gypsies and homosexuals in 20th century Nazi-Germany (e.g. Koonz, 2003), this might actually be the case. Actually, several relatively independent strands of research in the social psychological literature have focused on the phenomenon that people do not always consider their fellow human beings as being fully entitled to receive the benefits that could result from considering their fate from a moral perspective. Some of the concepts that are used in this literature, e.g. *dehumanization* (Bandura, Underwood, & Fromson, 1975), *infrahumanization* (Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003) and *moral exclusion* (Opotow, 1990), are aimed to explain the atrocities that people sometimes commit against fellow human beings. Another such concept, i.e. the *circle of moral regard* (Reed & Aquino, 2003) is aimed to explain why people differ in terms of whether they only see family, kin and fellow citizens as being suitable targets of their morally motivated prosocial behaviour, or whether they also see members of more distant social groups as in-group members who should be helped when being in need. Future work should examine whether the concept of moral status assignment as it is used in the present paper can serve to enlighten and possibly even integrate the work in these different strands of research on anti- and prosocial human-human interaction.

When taken together, we see the present study as a first attempt to bring the concept of moral status from the realm of ethics into that of empirical developmental psychological research. More work is needed to further examine how this approach can enlighten our understanding of human moral thought and feeling and its development.

Acknowledgements

We are grateful to the children, the schools and the young adults who participated in this study, to Antoinette Jens for her help in collecting the young adult data and to Hans Koot for his helpful comments on earlier versions of this paper.

References

- Bandura, A., Underwood, B., & Fromson, M. E. (1975). Disinhibition of aggression through diffusion of responsibility and dehumanization of victims. *Journal of Research in Personality*, 9, 253-269.
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin*, 115, 243-267.
- Bentham, J. (1789). *The principles of morals and legislation*. London: Methuen.
- Coley, J. D. (1995). Emerging differentiation of folkbiology and folkpsychology: Attributions of biological and psychological properties to living things. *Child Development*, 66, 1856-1874.
- Crozier, W. R. (1998). Self-consciousness in shame: The role of the 'other'. *Journal for the Theory of Social Behaviour*, 28, 274-286.
- Davidson, P., & Youniss, J. (1995). Moral development and social construction. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Moral development: An introduction* (pp. 431-453). Needham Heights, MA: Allyn & Bacon.
- Ferguson, T. J., Olthof, T., & Stegge, H. (1997). Temporal dynamics of guilt: Changes in the role of interpersonal and intrapsychic factors. *European Journal of Social Psychology*, 27, 659-673.

- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, 108, 814–834.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Herzog, H. A., & Galvin, S. L. (1997). Common sense and the mental lives of animals: An empirical approach. In R. W. Mitchell, N. S. Thompson, & H. L. Miles (Eds.), *Anthropomorphism, anecdotes, and animals* (pp. 237–253). Albany, NY: State University of New York Press.
- Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice*. Cambridge, UK: Cambridge University Press.
- Jonas, H. (1966). *Phenomenon of life: Toward a philosophical biology*. New York: Harper & Row.
- Kahn, P. H. (2004). Mind and morality. In J. A. Baird & B. W. Sokol (Eds.), *Mind, morals and action: The interface between children's theories of mind and socio-moral development. New directions for child and adolescent development* (Vol. 103, pp. 73–83). San Francisco, CA: Jossey-Bass.
- Kahn, P. H. (2006). Nature and moral development. In M. Killen & J. Smetana (Eds.), *Handbook of moral development* (pp. 461–480). Mahwah, NJ: Erlbaum.
- Knight, S., Nunkoosing, K., Vrij, A., & Cherryman, J. (2003). Using grounded theory to examine people's attitudes toward how animals are used. *Society and Animals*, 11, 307–327.
- Koonz, C. (2003). *Nazi conscience*. Boston, MA: Harvard University Press.
- McGraw, K. M. (1987). Guilt following transgression: An attribution of responsibility approach. *Journal of Personality and Social Psychology*, 53, 247–256.
- Olthof, T., Ferguson, T. J., Bloemers, E., & Deij, M. (2004). Morality- and identity-related antecedents of children's guilt and shame attributions in events involving physical illness. *Cognition and Emotion*, 18, 383–404.
- Olthof, T., Ferguson, T. J., & Luiten, A. (1989). Personal responsibility antecedents of anger and blame reactions in children. *Child Development*, 60, 1328–1336.
- Olthof, T., Schouten, A., Kuipers, H., Stegge, H., & Jennekens-Schinkel, A. (2000). Shame and guilt in children: Differential situational antecedents and experiential correlates. *British Journal of Developmental Psychology*, 18, 51–64.
- Opatow, S. (1990). Moral exclusion and injustice: An introduction. *Journal of Social Issues*, 46, 1–20.
- Piaget, J. (1932). *The moral judgment of the child*. London: Routledge & Kegan Paul.
- Plous, S. (1996). Attitudes toward the use of animals in psychological research and education: Results from a national survey of psychology majors. *Psychological Science*, 7, 352–358.
- Reed, A., II, & Aquino, K. F. (2003). Moral identity and the expanding circle of moral regard toward out-groups. *Journal of Personality and Social Psychology*, 84, 1270–1286.
- Saltzstein, H. D., & Kasachkoff, T. (2004). Haidt's moral intuitionist theory: A psychological and philosophical critique. *Review of General Psychology*, 8, 273–282.
- Singer, P. (1975). *Animal liberation*. New York: Avon books.
- Smith, R. H., Webster, J. M., Parrott, W. G., & Eyre, H. L. (2002). The role of public exposure in moral and nonmoral shame and guilt. *Journal of Personality and Social Psychology*, 83, 138–159.
- Vaes, J., Paladino, M. P., Castelli, L., Leyens, J. P., & Giovanazzi, A. (2003). On the behavioral consequences of infrahumanization: The implicit role of uniquely human emotions in intergroup relations. *Journal of Personality and Social Psychology*, 85, 1016–1034.
- Warren, M. A. (1997). *Moral status: Obligations to persons and other living things*. Oxford: Clarendon Press.
- Yuill, N. (1984). Young children's coordination of motive and outcome in judgments of satisfaction and morality. *British Journal of Developmental Psychology*, 2, 73–81.
- Zelazo, P. D., Helwig, C. C., & Lau, A. (1996). Intention, act, and outcome in behavioural prediction and moral judgment. *Child Development*, 67, 2478–2492.

Copyright of British Journal of Developmental Psychology is the property of British Psychological Society and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.